

EIGHT NEW MOSQUITOS IN THE BRITISH MUSEUM COLLECTION.

By F. W. EDWARDS, B.A., F.E.S.

*(Published by permission of the Trustees of the British Museum.)***Ochlerotatus oreophilus**, sp. n.

♀. *Head*: sides clothed with flat white scales, interrupted by a rather narrow horizontal band of flat black ones; two large patches of flat black scales on the top, separated by a rather narrow band of narrow white scales extending from the nape on to the front; a narrow line of narrow white scales bordering the upper part of the eyes. Eyes well separated. Proboscis and palpi black. First antennal joint blackish, grey-pruinose. *Thorax*: integument blackish, except for the reddish scutellum and a small pale spot on each side at the base of the postnotum. Prothoracic lobes and the space behind them clothed with flat white scales. Scutum clothed with narrow yellowish-white and blackish scales, the former arranged in definite narrow lines as follows: a median line extending from the front margin to a little in front of the scutellum, where it forks into two; a line on each side of this extending the whole length of the scutum, enlarged a little in front of the middle and sending a branch obliquely forwards from this point to the lateral angle of the thorax; and another line forming a border to the scutum. Scutellum with narrow scales, mostly yellowish-white, but some black ones on each side of the middle lobe. Pleurae with several patches of flat white scales. *Abdomen* black, above with conspicuous pure white basal lateral patches and traces of yellowish-white basal bands on all the segments; venter black, all the segments with pure white basal bands. Eighth segment well-developed, only partly retractile; cerci short, rather broad and rounded at the tip.

Legs black; front and middle femora with a white line beneath, middle femora also with a distinct white spot at the tip in front; hind femora white with a broad complete black ring a little before the apex, broadest above. Middle claws toothed, hind simple (front tarsi missing). *Wings* with blackish scales, rather densely covered; scales of the lateral series on the apical third of the wing rather broadly linear, with bluntly rounded tips. Base of upper fork-cell a little nearer the base of the wing than that of the lower; cross-veins separated by about $1\frac{1}{2}$ times their own length. Halteres light brown, knob with dark scales on the inner, light on the outer side.

Length of body, 5.5 mm.; of wing, 4.5 mm.

N. INDIA: Gharia, Murree Hills, W. Himalayas, 16. viii. 190.

A single female specimen, presented to the British Museum by the Agricultural Research Institute, Pusa.

This species may be readily distinguished by the thoracic and femoral markings. It belongs to a group which is rather numerously represented in Asia, especially in the mountainous regions, and includes such species as *O. pseudotaeniatus*, Giles, *O. macfarlanei*, Edw., *O. japonicus*, Theo., and *O. pulchriventer*, Giles; the group roughly corresponds to Theobald's genera, *Pseudohowardina* and *Hulecoetomyia*, and it may be possible eventually to revive one of these names for it. The nearest ally of the new species is perhaps *O. pulchriventer*, Giles; it differs in the points indicated.

Ochlerotatus eatoni, sp. n.*Culex eatoni*, Theobald, M.S.

♂. *Head* and *thorax* coloured and scaled as in *O. oreophilus*, except that the integument of the scutellum is dark, while that of the postnotum is blackish-brown with a more distinct pale lateral stripe towards the base; the pale thoracic lines are composed of golden-yellow rather than creamy-white scales and are rather less distinct; the two outer of the three longitudinal lines are narrowly interrupted just in front of the point from which arises the branch running to the lateral angle. Palpi only two-thirds as long as the proboscis, black, two last joints moderately hairy, the penultimate about half as long again as the terminal. *Abdomen* black, the segments with large silvery-white basal lateral spots, continuous with narrow dull white basal bands; venter black, the segments with pure white basal bands. *Genitalia*: side-pieces more or less cylindrical, nearly straight, without basal or apical lobes, some long dark hairs above and numerous very long yellow ones below; clasper flattened except towards the tip, curved, with a long terminal spine; harpagones with the terminal appendage very long, curved, bristle-like. *Legs*: all the femora black above, white below except towards the tip, the white not extending quite so far on the hind femora; middle and hind femora with a small whitish spot at the tip; tibiae and tarsi entirely black; larger claw on fore and mid feet with basal and median teeth, the smaller with median tooth only; hind claws simple. *Wings* with blackish scales which (towards the apex) are almost linear; bases of fork cells about level. Halteres with yellow stem and black knob.

Length 5 mm.; proboscis 3 mm.

MADEIRA Is.: Monte Funchal, 2,000 ft., 7.iii.1902 (*Rev. A. E. Eaton*).

One male presented to the British Museum by the collector.

Although from widely separated localities, this species and the preceding seem to be very closely allied; the difference in leg-markings however will sufficiently distinguish them; it is unfortunate that we have only the male of *O. eatoni* and only the female of *O. oreophilus*. Of previously described species the one which most resembles *O. eatoni* is the Himalayan *O. pulchriverter*, Giles, which differs principally in the absence of distinct markings on the thorax and in its remarkable male genitalia, which resemble those of the American genus *Haemagogus*.

Culex nilgiricus, sp. n. (fig. 1).

♂ ♀. *Head* with dark brown upright scales; creamy-white flat and narrow curved ones at the sides and in the middle respectively; the whitish more numerous in proportion to the dark brown ones in the male than in the female, and the flat ones extending higher up; the flat ones tend to form a line round the upper part of the eye margins, but in neither sex do they actually reach the middle line. A row of dark bristles round the eyes, of which a pair on the vertex are much longer than the others, at least in the female. Palpi and proboscis entirely black-scaled in both sexes; male palpi longer than the proboscis by their terminal joint; basal segment without any row of projecting scales, but with some pale shortish hairs and with a few long dark ones towards the tip; second and third joint with numerous long dark hairs, the second nearly five times as long as the labella, the third about one-quarter longer

than the second. *Thorax*: prothoracic lobes reddish brown, apparently without scales; scutum (mesonotum) reddish brown, slightly pruinose, clothed with reddish brown scales; scutellum pale, almost whitish, clothed with narrow pale brown scales; postnotum light reddish brown. Pleurae almost uniformly pale, unscaled. *Abdomen* blackish brown above, the segments with white basal bands of even width, broader in the male than in the female; venter almost uniformly pale. *Male genitalia*: side-pieces of the usual *Culex* form without special modification, leaf-like appendage very narrow. Claspers (fig. 1) moderate, smooth, gently curved, rather abruptly narrowed a short distance before the tip (as in *Culiciomyia*), a single fine hair arising from the point of narrowing. Unci with pointed tips. Harpagones apparently



Fig. 1. *Culex nilgircus*, Edw., sp. n.; clasper of male genitalia.

undivided, but provided with a rather long, pointed, downwardly extending projection, somewhat jagged on its lower edge (as in *Culiciomyia*). Harpes short and broad, without basal projection, their tips broad and provided with shorter and less numerous spines than usual. *Legs* dark-scaled, the under sides of the femora lighter; claws on the four anterior legs of the male each with a well-marked tooth. *Wings* rather thinly clothed with dark scales, those in the lateral series linear, few in number, except towards the tip of the wing. Fork-cells very long, yet scarcely twice as long as their stems, the upper with its base slightly nearer the apex of the wing than that of the lower. Cross-veins separated by about twice their own length. Halteres light brown.

Length of body, 6 mm.; ♂ wing, 4.5 mm.; ♀ wing, 5 mm.

MADRAS: Utakamand, Nilgiri Hills, 7,500 ft., 24-31.xii.1913 (*T. Bainbrigge Fletcher*).

1♂ 1♀ presented to the British Museum by the Agricultural Research Institute, Pusa.

I have placed this species in *Culex* owing to the apparent absence of the long outstanding scales of the male palpi and the fact that the flat scales on the head do not reach the middle line round the eyes; nevertheless it shows unmistakable affinities in its genital characters with the *Culiciomyia* group. In general appearance also it has an extremely close resemblance to *Culiciomyia viridiventer*, Giles, known from several localities in the Himalayas; apart from the characters just mentioned this species differs chiefly in the male genitalia, which in *C. viridiventer* are much more specialised. In view of the discovery of this species it is more than ever doubtful whether the genus *Culiciomyia* can be maintained.

It is worthy of note that a *Culex* with spotted wings was taken by Mr. Fletcher in the same locality which proved to be the true *C. mimeticus*, Noé, and not the recently distinguished *C. mimulus*, Edw., proving that both these species occur within the Oriental region.

Culex ingrami, sp. n. (figs. 2, 3).

Differs from *C. invidiosus*, Theo., only in characters of the male genitalia. The side-pieces and their appendages rather closely resemble those of *C. invidiosus*, but the clasper is more evenly narrowed towards the tip. The unci are rounded at the tip, the harpagones divided into two portions which have a very peculiar form; neither of them is toothed or subdivided. The harpes have the usual crown of spines, but instead of a finger-like basal projection they have a large blunt prominence.

ASHANTI: Sunyani, 1♂ 3♀ bred from larvae (*Dr. A. Ingram*).

One male and two females presented to the British Museum by the Imperial Bureau of Entomology.

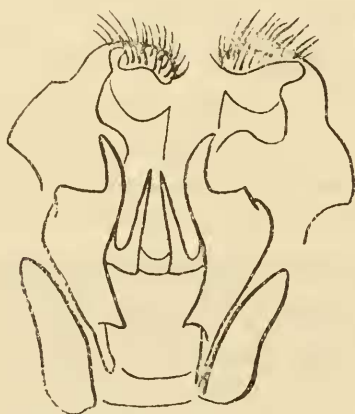


Fig. 2. *Culex ingrami*, Edw., sp. n. ; male genitalia.

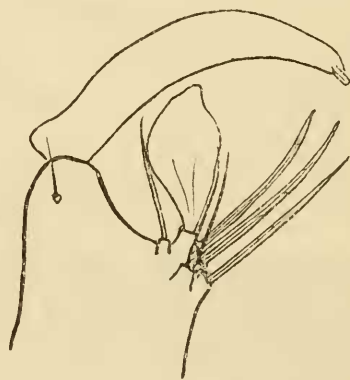


Fig. 3. *Culex ingrami*, Edw., sp. n. ; left clasper of male.

Although in general characters this species exactly resembles *C. invidiosus*, its genitalia are much more like those of *C. pruina*, Theo.; there are however good specific differences. Dr. Ingram has obtained and distinguished larvae of all three forms at Sunyani, and we have here therefore another interesting case of the correlation between larval and male genital characters.

Culex pacificus, sp. n. (fig. 4).

♂. *Head*. Integument blackish, clothed with scales of the usual form: flat whitish scales at the sides, narrow dark brown ones above; upright forked scales light brown in front, dark brown behind. Proboscis not quite as long as the abdomen, black-scaled for the most part, but with a narrow and ill-defined pale ring just beyond the median suture, most distinct on the under side. Palpi longer than the proboscis by the length of their last joint; long hairs on the last two joints few in number; scales mostly black, but small patches of whitish ones at the bases of the last two joints on the under side, sometimes just passing round to the upper side. *Thorax*: integument blackish; scales of scutum mostly dark brown, but there are a pair of roundish patches of black ones towards the front; and a suggestion of a pair of paler lines on the posterior half; scales of scutellum lighter. Pleurae with some inconspicuous flat whitish scales. *Abdomen* black, the segments with white basal bands of even width; ventrally the segments have broad black apical bands. *Genitalia*: the side-pieces are straighter than in most species of *Culex*, with long dark hairs above, and a patch

of yellowish ones on their latero-ventral surface; the lateral projections bearing the usual leaf-like appendage, together with a spine and two hairs; claspers very large and broad, bent almost at an angle about the middle. Basal parts somewhat resembling those of *C. trifilatus*, Edw., the harpagones being divided into three untoothed parts. *Legs* black, tarsi not ringed; under side of hind femora pale; small patches of pale ochreous scales at the tips of the femora and of the front and middle tibiae, and a larger patch forming a very distinct pale spot at the tip of the hind tibiae. Claws of the front and middle legs each with a single tooth. *Wings* with blackish scales, those in the lateral series linear. Base of upper fork-cell nearer the base of the wing than that of the lower; cross-veins separated by nearly twice the length of the lower. Halteres brownish.

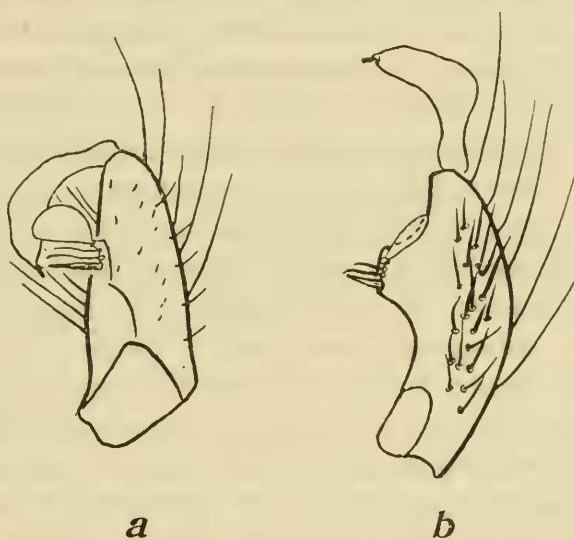


Fig. 4. *Culex pacificus*, Edw., sp. n.; male genitalia; *a*, left side-piece, inner lateral view; *b*, right side-piece, outer latero-ventral view.

♀. Much resembles the male, apart from sexual differences, but there is practically no sign of a pale ring on the proboscis, even on the under side. There is the usual variation in the abdominal markings, the pale bands sometimes appearing to be absent; when present their posterior edges are straight, not rounded.

Length (without proboscis) about 4-4.5 mm.

NEW HEBRIDES: Port Vila, Zagabé, and at the French Hospital.

About 60 specimens sent by the French Government to the Imperial Bureau of Entomology, who have presented a series to the British Museum.

The species differs from *C. fatigans* in the general black colour and smaller size, in the presence of a more evident pale ring on the proboscis of the male, in the much more distinct pale spot at the tip of the hind tibia, and in the very different male genitalia. The general appearance is suggestive of *C. sitiens* or *C. jepsoni*, but the tarsi and the female proboscis are without pale rings.

Eretmopodites dracaenae, sp. n.

♂ ♀. *Head* clothed with metallic silvery-blue scales, a small patch of upright forked scales on the nape which are mostly yellow, a few towards the front being black. Proboscis and palpi black-scaled. *Thorax* with yellow integument; prothoracic lobes clothed with bluish-silvery scales. Scutum clothed with narrow orange and black scales, the black ones arranged as follows: a few on the area behind the prothoracic lobes; a pair of stripes commencing at the base of the wing and extending half-way from there to the front margin; a second pair internal to these and extending from the scutellum almost to the front margin, widening out a little in front of shorter outer stripes, without quite coming into contact with these; an ill-defined median black stripe on the anterior half of the scutum, divided into two by a double row of orange scales which lie immediately on each side of the middle line. Lateral lobes of scutellum clothed with narrow scales, outwardly orange and inwardly black; median lobe clothed with flat scales, chiefly bluish-silvery, though those round the border are black. A stripe of bluish-silvery scales extending across the pleurae from the prothoracic lobes on to the first abdominal segment; a small patch of silvery scales at the base of each coxa. Postnotum with two or three small dark bristles (perhaps not constant). *Abdomen*: dorsum black, each of segments ii.-vii. with the usual oblique lateral purplish-silvery marks; in this species those on segments vi. and vii. unite above to form complete transverse bands; eighth segment black-scaled. Venter clothed with golden scales, the scales on the apical margin of the last three segments long and black. *Male genitalia*: side-pieces small, with a single long bristle on the dorso-lateral surface; basally there is a thick downwardly-projecting lobe bearing a patch of erect scales; claspers long, thin, curved, with some dark-coloured hairs and scales. *Legs* black-scaled, except the under sides of the femora towards the base, which are yellow. Claws of the four anterior legs in the male unequal, simple; in the female equal, toothed. Hind tibiae distinctly shorter than the others. *Wings* clothed with dark brown scales, those in the lateral series lanceolate or ovate-lanceolate. Base of upper fork-cell nearer base of wing than that of the lower. Halteres with yellow stem and dark knob.

Length 4-5 mm.

SIERRA LEONE: Freetown (A. W. Bacot).

A series was bred by Mr. Bacot from pupae found in water collected at the bases of the leaves of the "Cocked Hat" plant (*Dracaena* sp.); specimens were also obtained, though less frequently, from leaf bases of the "Koko Yam" (*Colocasia antiquorum*), and also of the banana and a species of *Sarsaparella*.

Type ♂ and other specimens presented to the British Museum by the West African Yellow Fever Commission.

This species is allied to *E. quinquevittatus*, but differs therefrom markedly in the structure of the genitalia, and also in the following points: the scales of the head have a more pronounced blue tint; the thoracic stripes are less clearly marked, while the double row of orange scales dividing the median black stripe is absent in *E. quinquevittatus*, and in that species the silvery marks on the sixth abdominal segment do not meet above.

It is interesting to note that Mr. Bacot found a definite fauna in the leaf-axils; larvae of *Stegomyia simpsoni*, Theo., and *Uranotaenia ornata*, Theo., were nearly always present with *Eretmopodites dracaenae*, and often also a species of *Ceratopogon* and a small Psychodid (? *Pericoma* sp.). With the exception of *Stegomyia simpsoni* these larvae were found nowhere else.

Wyeomyia grenadensis, sp. n.

♀. Closely related to *W. clasoleuca*, D. and K., from which it differs as follows:—Scales on prothoracic lobes blue or violet below, coppery above; those on the scutum (mesonotum) black, with scarcely any metallic lustre; those on the area behind and above the prothoracic lobes almost white. Tibiae, front tarsi, and first three joints of the hind tarsi black-scaled below as well as above; middle tarsi pale-scaled below, becoming paler apically, scales on the apical joints whitish yellow; fourth hind tarsal joint with white scales below on the basal four-fifths; fifth hind tarsal entirely white-scaled below. Terminal abdominal setae dark.

GRENADA (*A. Macdonald*).

Six females received by the Wellcome Bureau of Scientific Research; type and two other specimens presented to the British Museum.

The slight colour differences between this and *W. clasoleuca* would seem to indicate that the two are only geographical species, but as the males of both are unknown the point must remain undecided at present.

Anopheles domicolus, sp. n.

♀. *Head* with the usual white and black upright forked scales, the former constituting a moderately large patch on the vertex; very long sinuous white scales projecting forwards from the front. Proboscis black-scaled. Palpi black-scaled, with a narrow white ring embracing the articulation of the first and second joints, and two much broader white rings, one covering the tip of the second joint and the basal third of the third joint, the other covering the apex of the third joint and the whole of the fourth; these two outer white rings are equal in breadth and distinctly broader than the black ring which separates them; the terminal palpal joint is barely one-third as long as the penultimate. Antennae with the basal joint yellowish; second joint with some small white scales; second and following joints (except the last two) with whitish hairs. *Thorax*: prothoracic lobes with a number of black bristles, prosternum with a single bristle; scutum with black bristles and very narrow, slightly curved white scales, the latter more dense towards the front margin; sides of scutum rather broadly dark brown, the median area light grey, without distinct markings. *Abdomen* blackish, the hairs yellowish; no scales. *Legs* black, the tips of the tibiae and of the first two tarsal joints on all the legs white; on the hind legs the tips of the third and fourth and the bases of the second, third, fourth and fifth tarsal joints are also white. *Wings* with the scales of the lateral series linear-lanceolate; markings as follows:—costa with five black spots, the first basal and about as long as the third, second and fourth a little shorter, fifth less than half as long as the fourth; first three separated by very narrow white spots, the white between the third, fourth and fifth broader. A small black spot in the wing fringe at the tip.

First longitudinal vein marked like the costa, except that the basal black spot is absent, and the second (the one below the third costal) is narrowly interrupted with white near the base. Second vein white about the place of origin of the third vein, at the base of the fork and at the tip of the upper branch of the fork, otherwise black.

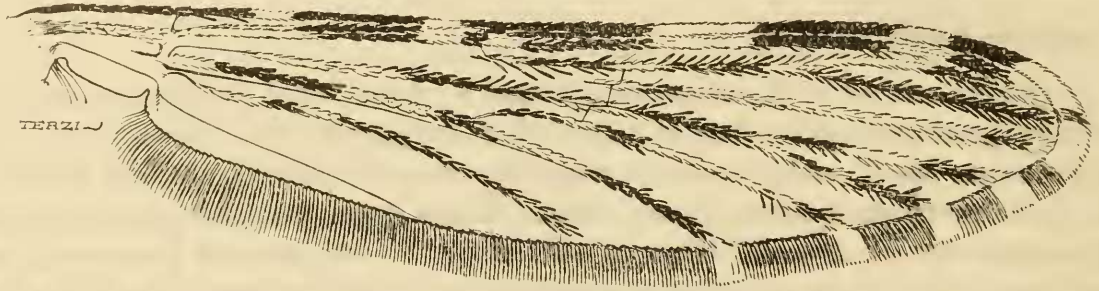


Fig. 5. Wing of *Anopheles domicolus*, Edw., sp. n.

Third vein white, with small black spots close to the base and tip. Fourth vein black, white towards the base, about the cross-vein, at the base of the fork and at the tip of each branch. Fifth vein black with a small white spot at the extreme base, a longer one before the fork, very small ones at the cross-vein and at the tip of the upper branch, longer ones beyond the middle of the upper branch and near the base of the lower branch. Sixth vein black with two rather small white spots, one at and the other near the base. Pale fringe spots opposite the terminations of all the veins except the sixth. Upper fork-cell with its base nearer the base of the wing than that of the lower.

Length of body, 3.5 mm. ; of wing, 3.3 mm.

NORTHERN NIGERIA : Zungeru, Oct.–Nov. 1915, six females taken in bungalow (*Dr. W. B. Johnson*) ; presented to the British Museum by the collector.

This species belongs to the *A. marshalli* group, the members of which are closely allied and difficult to separate, and in some cases of doubtful specific rank. The new form differs from *A. marshalli*, which it resembles most closely, in having the base of the costa entirely dark, no white interruption in the middle of the third black spot on the first longitudinal vein ; a longer black spot near the base of the fifth vein ; white rings at the bases of the last four hind tarsal joints ; and, most important, shorter and slightly broader wing-scales. In none of the six specimens does there appear to be any variation in regard to any of these points, and although *A. marshalli* is somewhat variable, I have not seen a specimen which could be confused with the present form. It therefore seems justifiable to regard these Nigerian specimens as belonging to a species distinct from *A. marshalli*, though probably representing it in this region.